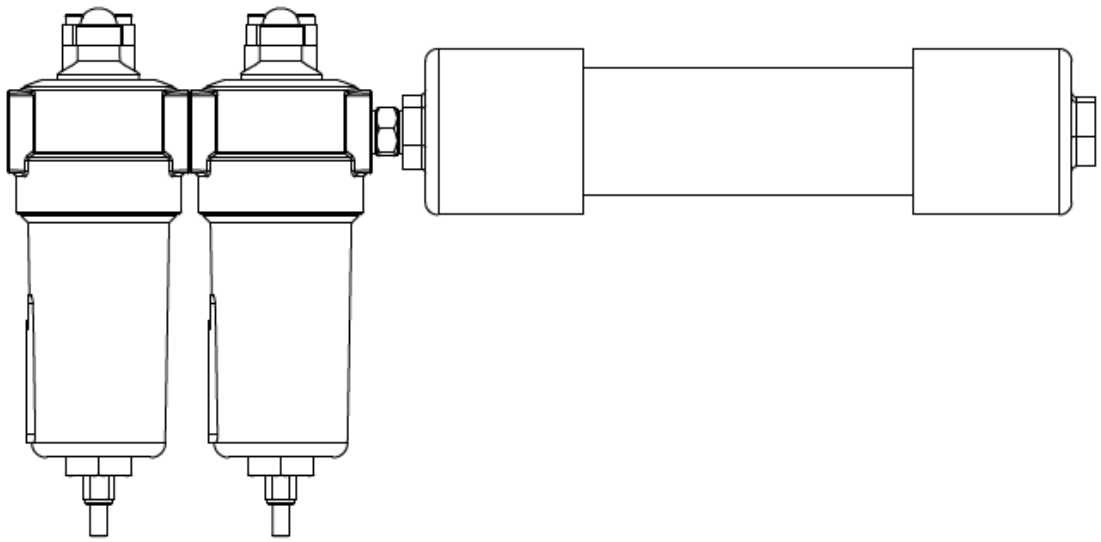
Installation and operating manual

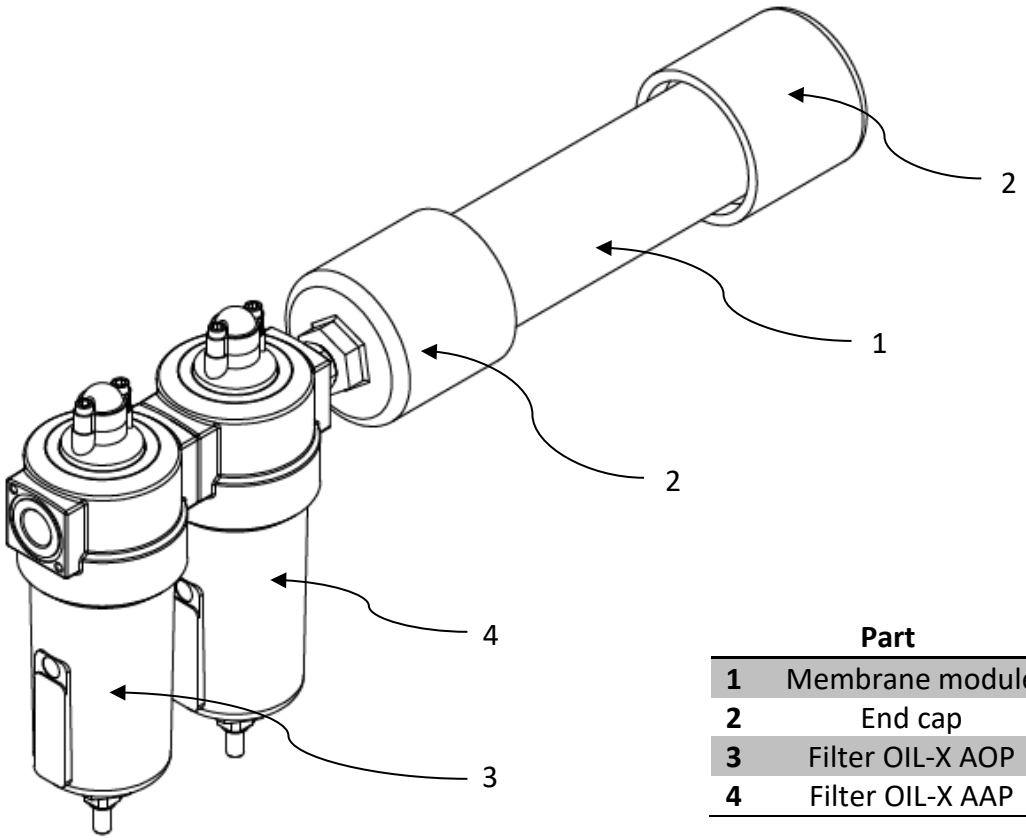
PUREMFP



Please read the following instructions carefully before installing drying unit into service. Trouble free and safe operating of the unit can only be guaranteed if recommendations and conditions stated in this manual are respected.

CE

Components



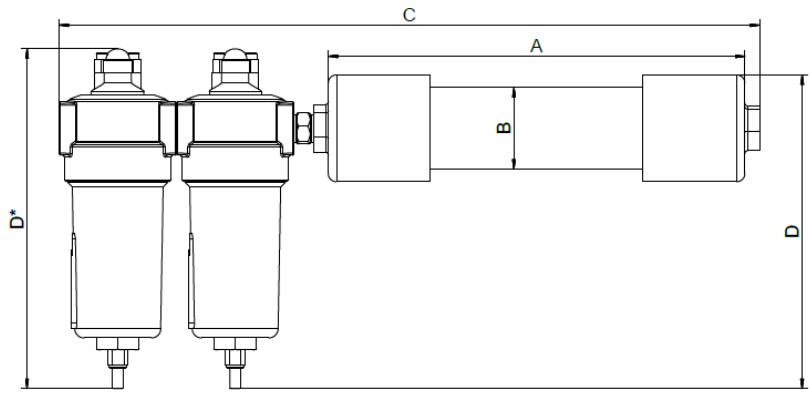
	Part
1	Membrane module
2	End cap
3	Filter OIL-X AOP
4	Filter OIL-X AAP

Technical data

SIZES

Model	PIPE SIZE [inch]	FLOW CAPACITY*		DIMENSIONS [mm]			
		[Nm³/h]	[scfm]	A	B	C	D (D*)
PUREMFP 003	¼"	3	1,8	224	43,7	325	175 (195)
PUREMFP 006	¼"	6	3,5	325	43,7	453	175 (195)
PUREMFP 009	¼"	9	5,3	427	43,7	555	175 (195)
PUREMFP 012	¼"	12	7,1	503	43,7	611	175 (195)
PUREMFP 018	½"	18	10,6	312	61	476	208 (228)
PUREMFP 024	½"	24	14,1	376	61	540	208 (228)
PUREMFP 032	½"	32	21,2	465	61	661	208 (228)
PUREMFP 044	½"	44	28,3	592	61	788	208 (228)
PUREMFP 063	½"	63	37,1	411	89	607	208 (228)
PUREMFP 090	½"	90	53	551	89	755	284 (304)
PUREMFP 123	½"	123	72,4	551	89	755	284 (304)
PUREMFP 180	1"	180	106,6	607	114	1805	290 (310)

*At 7bar, inlet dew point +35°C, outlet dew point +15°C



PERFORMANCE

Outlet dew point	15°C		3°C		-20°C		-40°C	
Purge air consumption	10%		14%		21%		29%	
% Water removal	69,70%		86,53%		98,20%		99,77%	
Model	[Nm³/h]	[scfm]	[Nm³/h]	[scfm]	[Nm³/h]	[scfm]	[Nm³/h]	[scfm]
PUREMFP 003	3	1,8	2,2	1,3	1,4	0,8	1,02	0,6
PUREMFP 006	6	3,5	4,3	2,5	2,8	1,7	2	1,2
PUREMFP 009	9	5,3	6,4	3,8	4,3	2,5	3,1	1,8
PUREMFP 012	12	7,1	8,5	5,0	5,7	3,3	4,1	2,4
PUREMFP 018	18	10,6	12,8	7,5	8,5	5,0	6,2	3,6
PUREMFP 024	24	14,1	17	10,1	11,3	6,7	8,2	4,8
PUREMFP 032	32	21,2	25,6	15,1	17	10	12,4	7,3
PUREMFP 044	44	28,3	34,1	20,1	22,7	13,4	16,4	9,7
PUREMFP 063	63	37,1	44,9	26,4	29,7	17,5	21,5	12,7
PUREMFP 090	90	53	67,3	39,6	43,8	25,8	31,1	18,3
PUREMFP 123	123	72,4	91,7	54,0	58,8	34,6	42,6	25,1
PUREMFP 180	180	106,6	128,1	75,4	85,5	50,3	61,5	36,2

At 7bar and inlet dew point +35°C, data refers on inlet flow capacity

CORRECTION FACTORS

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).
CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x C_{OP}

OPERATING PRESSURE

[bar]	4	5	6	7	8	9	10	11	12
[psi]	58	72	87	100	115	130	145	160	174
C_{OP}	0,41	0,56	0,76	1	1,22	1,48	1,76	1,86	2,22

MATERIALS

Membrane fiber	PES
End cap	Nylon(Aluminiumx)
Shell	Aluminium
Filter housing	Aluminium

*PUREMFP 180

DRYER RATING ACCORDING TO ISO8573-1

Solid particles	Water	Oil
-	2*	-

*Outlet dew point depends on inlet conditions and flow. For specific operating conditions check table below.

TECHNICAL SPECIFICATION

Operating temperature	1,5 - 60 °C	35 - 140 °F
Operating pressure	0 - 12 barg	0 – 181 psi
Max. pressure change	1 bar/s	14,5 psi/s
Differential pressure	200 mbar	2,9 psi
Required inlet air quality (particles)*	Class 1	
Required inlet air quality (oil)*	Class 1 (< 0,01mg/m3)	

*If air quality doesn't match requirements, membrane can be permanently damaged

Safety instructions

The relevant safety at work and accident prevention regulations, plus operating instructions, shall apply for operating the dryer. The dryer has been constructed in accordance with the generally recognized rules of engineering.

Ensure that installation complies with local laws for operation and routine testing of pressure equipment at the place of installation.

Operator/user of the dryer should make himself familiar with the function, installation and start-up of the unit. All the safety information is always intended to ensure your personal safety.

- Do not exceed max. operating pressure or operating temperature range (see data label).
- The permissible working temperatures and pressures for ad-on parts and dryer elements are given under Technical data for those ad-ons. Maximum temperature and pressure for assembled system is the lowest of any individual part.
- It is necessary to ensure that the unit is equipped with the corresponding safety and test devices to prevent the permissible operating parameters from being exceeded.
- Dryer has been designed for a primarily static pressure. Rapid changes of pressure are not allowed.
- Ensure that the dryer is not subject to vibrations that could cause fatigue fractures.
- Dryer is not to be subjected to mechanical stresses.
- The medium used may not have any corrosive components that could attack the materials of the dryer in a way that is not permitted.
- All installation and maintenance work on the dryer may only be carried out by trained and experienced specialists.
- It is forbidden to carry out any kind of work on the dryer and piping, including welding and constructional changes, etc.
- Depressurize the system before carrying out the installation work.
- Ensure that dryer is installed without any stresses.
- Use original spare parts only.
- Use the device for appropriate purpose only.

Appropriate use

PUREMFP series membrane dryers are designed for high efficient removal of water vapours from compressed air. This appliance must be used only for the purpose for which it was specifically designed. All other uses are to be considered incorrect and will void warranty.

Specifically:

- dryer can only be used for compressed air applications.
- dryer cannot be used if the following substances are present in air or fluids: hydrocarbons, chlorinated or halogenated hydrocarbons, ketones, esters, ozone, strong acids or bases and phenols
- for best results and longlife service, pre-filtration is required - 1µm particulate filter and 0,01µm coalescing filter. Particulate, oil contamination and liquid condensate have to be safely removed before compressed air flows into the membrane dryer
- pre filtration must be maintained on regular basis or at least once a year
- do not use galvanized fittings between filters and membrane dryer
- sealants that are recommended are Teflon tape, Loctite 55, Loctite 30561, LA-CO Slic-tite, LA-CO Plasto-Joint Stick. DO NOT USE: Loctite 561, Loctite 565, Loctite 569 or all other anaerobic thread lockers

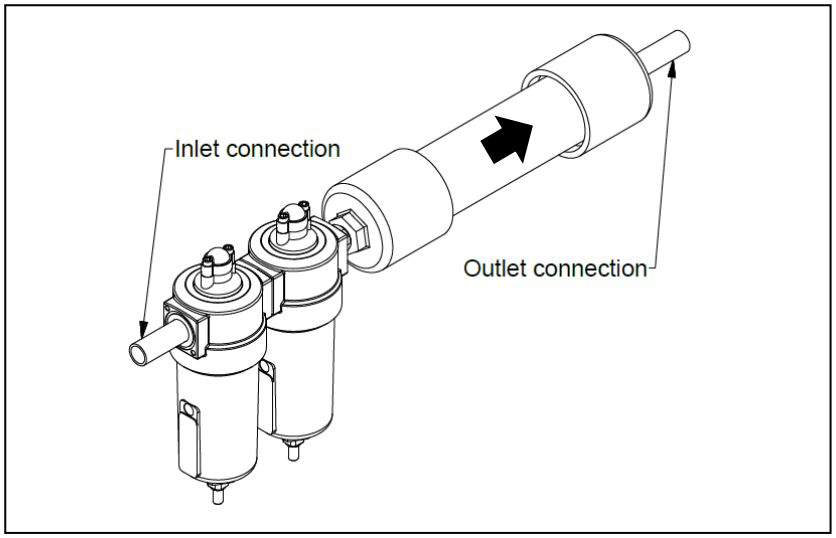
- flow control devices should be installed downstream from dryer
- ensure correct flow direction
- turn on compressed air supply slowly

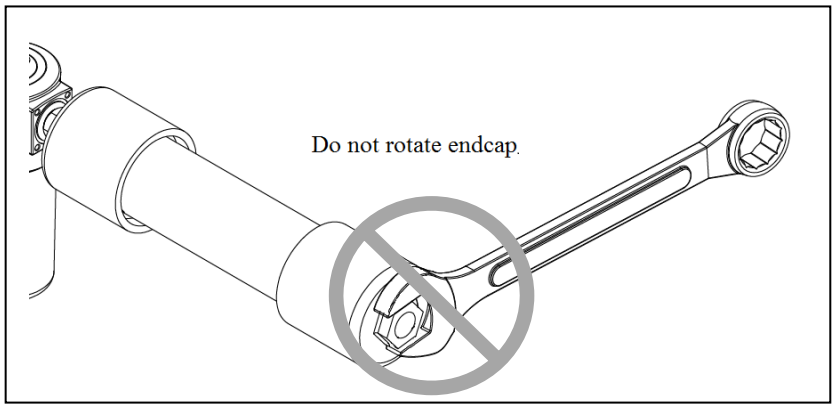
The manufacturer will under no circumstances be responsible for any damage resulting from improper, incorrect or unreasonable use.

Use genuine spare parts only. Any damage or malfunction caused by the use of ungenuine parts is not covered by Warranty or Product Liability.

Installation

Connect PUREMFP dryer on pipe system. Inlet and outlet connections must be as shown in picture. Use only recommended sealants.





Operating principle

- Hollow fibers allow water vapor to pass through the membrane while retaining the compressed air.
- While air flows down the bore of the fiber, water vapor diffuses through walls of the fibers.
- Some of the dried air is then used as purge air. Purge air is expanded through the nozzle and released into the space surrounding the outside of the fibers to sweep the moisture away (for purge air consumption look at the performance table).
- Purge air constantly blows through hole on membrane shell out of membrane module. **Do not block this hole during the operation in any case!**
- Membrane dryer rapidly and continuously provides dry compressed air.

Maintenance

- Damaged components are to be replaced by new ones. If a marked degree of damage is found, the entire dryer is to be replaced.
- Carry out a check for leaks once the maintenance work has been finished.
- Once per year make a visual check of membrane dryer housing and make sure there is no visual damage
- Check dryer in detail every 10 years, if there is no operating disorder or visual damage, it can continue to operate.

Before maintenance depressurize the system!

Warranty exclusion

The guarantee shall be void if:

- The operating instructions were not followed with respect to initial commissioning and maintenance.
- The unit was not operated properly and appropriately
- The unit was operated when it was clearly defective.
- Non-original spare parts or replacement parts were used.
- The unit was not operated within the permissible technical parameters.
- Unauthorised constructional changes were made to the unit or if parts of the unit that may not be opened were dismantled.

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